Four Perspectives to Conceptualizing Material Agency for Studying Technology in Organizations

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Abstract. Organizational researchers studying technology face the fascinating and difficult task of theorizing about the complicated interrelation of human and technological aspects of organizing. As the number of theories and concepts describing the role technology in social processes proliferates, researchers must work to understand which theoretical lens best reflects their own philosophical stance and research interests and how it differs from other lenses. This paper compares four sociological traditions that build the foundation for modern theorizing about technology in organizations – practice theory, actor-network theory, agential realism, and critical realism-- and reviews researchers' extensions to studying technology in organizations. We seek specifically to understand which perspectives can meaningfully account for differences in technologies (e.g., hammers versus robots) without being overly deterministic about material properties. Based on our reading of the literature, we highlight analytical advantages and common criticism of each theory and suggest potential ways of cross-pollinating concepts across theoretical divides without violating onto-epistemological assumptions of each theory.

Keywords: material agency, sociomateriality, practice theory, actor-network theory, agential realism, critical realism, technology